**MANAGEMENT OF SEVERE ACUTE AND NECROTIZING PANCREATITIS**

**PATHOPHYSIOLOGY**
Severe pancreatitis is persistent organ failure with local complications per Revised Atlanta Criteria. It develops in 20% of acute pancreatitis (AP), with 38% of severe pancreatitis developing organ failure in 1st week. 42% mortality in 1st week. 5-10% of AP develop pancreatic necrosis, with acute inflammation + release of proteolytic enzymes → auto-digestion of pancreas → formation of peri-pancreatic necrosis.

**DIAGNOSIS**
- Early involvement with multorgan failure, pain control, enteral feeding, and multidisciplinary approach with GI, surgery, IR, critical care, ID, and nutrition.
- Deterioration >14 days is typically due to SIRS from infected necrosis.
- Deterioration <10-14 days is typically due to sterile necrosis.

**MANAGEMENT**
- Percutaneous drainage: single or multiple catheters, serially upsized, irrigated, and repositioned. Source control for patients too sick for endoscopic transmural drainage.
- Consider in <2-4 weeks without mature walled off collection who are failing conservative management.
- Consider when necrosis extends into paracolic gutters or pelvic space.
- Can be done alone, or in combo with other interventions.
- ↑ risk of pancreaticocutaneous stula formation.

**Surgical Approaches**
- Consider operative debridement in infected or sterile pancreatic necrosis with persistent organ dysfunction.
- Minimally invasive options: Video-assisted retroperitoneal debridement (VARD), laparoscopic and open transgastric debridement.
- VARD best for central distribution of necrosis extending into L paracolic gutter; Transgastric debridement best for centrally located necrosis.

**Step-Up Therapy**
- Percutaneous drainage, followed by endoscopic drainage/debridement or VARD if necrosis does not resolve.

**INFECTED NECROSIS**
- Early treatment with uid resuscitation, pain control, and total enteric feeding.
- Multidisciplinary approach with GI, surgery, IR, critical care, ID, and nutrition.
- Deterioration <10-14 days is typically due to SIRS from sterile necrosis.
- Deterioration >14 days is more likely due to infected necrosis.

**FURTHER INTERVENTIONS**
- **Endoscopic Transluminal Drainage/Necrosectomy**
  - EUS to visualize and puncture collections, & placement of stent transgastrically (cystgastrostomy) or transduodenally (cystduodenostomy). If necessary, followed with mechanical débridement with endoscopic necrosectomy.
  - ERCP with transpapillary stent placement for subacute drainage of symptomatic collection (less ideal for infectious which need faster drainage).

**Percutaneous Catheter Drainage**
- Placement of single or multiple catheters, variably sized, irrigated, and repositioned.
- Source control for patients who fail standard percutaneous transmural drainage.
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